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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,755	12/03/2003	Ajay Prabhakar Giri	FIS920010385US2	6808

7590

04/27/2005

IRA D. BLECKER  
2070 ROUTE 52  
HOPEWELL JUNCTION, NY 12533

EXAMINER

NGUYEN, DONGHAID

ART UNIT PAPER NUMBER

3729

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	<b>Application No.</b> 10/726,755	<b>Applicant(s)</b> GIRI ET AL.	
	<b>Examiner</b> Donghai D. Nguyen	<b>Art Unit</b> 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-21 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 15-21 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. The proposed reply filed on February 28, 2005 has been entered of record.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,821,762 to Hamaguchi et al in view of US Patent 6,281,452 to Prasad et al.

Regarding claims 15 and 19, Hamaguchi et al disclose a method of forming a multichip module (Fig. 7) comprising the steps of: forming a thin film structure (1b, see Col. 11, lines 2-3); positioning an electrically insulating frame (ceramic laminate 2) with respect to a first surface (bottom surface) of the thin film structure (1b) so that the frame extends beyond a periphery of the thin film structure; attaching an electrically insulating frame (2) to a first surface of the thin film structure (Fig. 1); attaching at least one semiconductor device (3) to the first surface of the thin film structure (Fig. 1); and attaching at least one semiconductor device (3) to a second surface of the thin film structure (Fig. 14), wherein the first surface is opposed to the second surface and wherein there is interconnectivity through the thin film structure between the semiconductor devices (3) and the frame (Col. 12, lines 2-30). Hamaguchi et al do not teach the use of a temporary carrier and the removing it from the thin film. Prasad et al teach steps of

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forming a thin film (21) having thickness of 15-250 microns (Col. 6, lines 65-67) on a temporary carrier (23) and removing the temporary carrier (23) from the thin film (21, see Figs. 3-5) adapted for enhancing the connections between chips (Col. 8, lines 28-39). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method invention of Hamaguchi et al by the Prasad et al teachings of forming the thin film on the temporary carrier and removing the temporary carrier from the thin film for preventing distortion and damaging to the thin film and enhancing the connections between chips (see Col. 7, lines 50-65).

Note that: the “sacrificial film 23” of Prasad et al represented the broadly claimed temporary carrier as claimed by the present invention.

Regarding claim 16, Hamaguchi et al disclose the frame (2) having an open area (2a) through which at least one semiconductor device is exposed (Fig. 1).

Regarding claims 17-18, Hamaguchi et al disclose step of applying epoxy (epoxy or polymer resin 5) between the frame (2) and the semiconductor device (Fig. 4).

Limitation of claim 20, (See discussion at Col. 11, lines 50-66 of Hamaguchi et al).

Regarding claim 21, Hamaguchi et al disclose the step of attaching at least one passive component (1j) on one side of the opposed surface of the thin film structure (Fig. 10).

### ***Response to Arguments***

4. Applicant's arguments are acknowledged.
5. Applicant's arguments with respect to claims 15-21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN  
April 20, 2005

  
MINH TRINH  
PRIMARY EXAMINER